REMARKS

Reconsideration and allowance of this application are respectfully requested in light of the above amendments and the following remarks.

Claims 1 and 4 have been amended for clarity and to overcome the objections thereto. The amendments of claims 1 and 4 are considered to be non-narrowing; therefore, no estoppel should be deemed to attach thereto. Claims 6-8 have been newly added. Support for the subject matter of claims 6-8 is provided for example in Figs. 11 and 21 and paragraphs [0091], [0092], and [0188]-[0191] of the published specification. (It should be noted that references herein to the specification and drawings are for illustrative purposes only and are not intended to limit the scope of the invention to the referenced embodiments.)

Claims 2, 3, and 5 stand withdrawn from consideration as being directed toward non-elected subject matter.

Claims 1 and 4 stand rejected, under 35 USC §102(b), as being anticipated by Daoud (US 4,835,791). To the extent that that these rejections may be deemed applicable to the amended and new claims presented herein, the Applicants respectfully traverse based on the points set forth below.

Claim 1 defines a modulation apparatus that performs single side band (SSB) modulation to obtain a lower side band (LSB) signal using a carrier frequency that is higher, by the fundamental frequency of an input symbol, than a carrier frequency that is used to obtain an upper side band (USB) signal. The claimed subject matter provides an advantage of supporting the multiplexing of an LSB signal and a USB signal in a frequency band having a bandwidth equal to the bandwidth of either LSB and USB signal, so as to reduce the bandwidth required to

communicate these signals and increase the communication spectral efficiency (see Figs. 4A-4D and the published specification at paragraph [0106], lines 18-19).

Daoud discloses nearly the opposite feature to the Applicants' claimed subject matter of obtaining a LSB signal using a carrier frequency that is higher, by the fundamental frequency of an input symbol, than a carrier frequency used to obtain a USB signal. Specifically, Daoud discloses obtaining a USB signal using a carrier frequency that is slightly higher (so as to reduce crosstalk) than a carrier frequency used to obtain an LSB signal. Thus, Daoud's modulator generates a combined modulated signal comprising the LSB and USB signals that requires slightly more than twice the bandwidth of each of the LSB and USB signals, whereas the LSB and USB signals produced by the claimed modulation apparatus are combined within the bandwidth of either LSB and USB signal. In brief, Daoud's modulator would produce a modulated signal comprising LSB and USB signals that requires slightly more than $2BW_1$, where BW_1 is the bandwidth of each of the LSB and USB signals, as illustrated in Applicants' Fig. 4B. The Applicants' claimed modulation apparatus would produce a modulated signal comprising LSB and USB signals that requires BW_1, or less than half of that required by Daoud's modulator, as illustrated in Applicants' Fig. 4D.

Accordingly, the Applicants respectfully submit that Daoud lacks features recited in instant claim 1 and thus does not anticipate the subject matter defined by claim 1. Independent claim 4 similarly recites the above-mentioned subject matter distinguishing apparatus claim 1 from Daoud, but with respect to method. Therefore, allowance of claims 1 and 4 and all claims dependent therefrom is considered to be warranted.

In view of the above, it is submitted that this application is in condition for allowance, and a notice to that effect is respectfully solicited.

If any issues remain which may best be resolved through a telephone communication, the Examiner is requested to telephone the undersigned at the local Washington, D.C. telephone number listed below.

Respectfully submitted,

/James Edward Ledbetter/

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JEL/DWW/att

James E. Ledbetter
Registration No. 28,732

Attorney Docket No. 009289-06101
Dickinson Wright PLLC
1875 Eye Street, NW, Suite 1200
Washington, DC 20006
Telephone: (202) 659-6966
Facsimile: (202) 659-1559